# Social and Economic Aspects of Planning
# Effects of Alternatives
# Valuing Resources

PRESENTER: Let me begin by answering Charise's question in that we are presenting in this course regional economics as one technique, nonmarket valuation as another technique. Two separate models, two ways of doing economics. There is the possibility in the near future of a computable general equilibrium model that allows you to actually tie together the input-output regional economics as one part and what I'm going to talk about, techniques for valuing nonmarket goods as another part, all within one model. But this is not standard yet. This is sort of the cutting edge, and so, you know, for all intents and purposes, we'll talk about these as two separate things. So input-output with IMPLAN. And what I'm going to talk about is nonmarket valuation and valuing both market and nonmarket resources for benefit-cost analysis.

And to get started I want to kind of deal with a myth, and that is a myth that somehow economists assign values, when that I got my Ph.D. I got a special Magic Marker, and when I go hiking I write down what the trees are worth and any herons that I see and so forth.

Economists don't assign values. People have those values. We play detective. And what these techniques are that we're referring to are a way to play detective and quantify and monetize the values that people already have. And so that's important to keep in mind, that people have these values and we're just playing detective on how to estimate them.

Now, the total economic value, if you'll remember that pie chart that I laid out, you know, the public lands, while they do provide market values, there's a lot of nonmarket values such as recreation, amenities. We were talking at the break things like carbon sequestration and things like existence value. So there's a lot of values that are below the surface. This market value is just the tip of the iceberg.

So public lands, the very fact that we've retained them in public ownership, says that these public goods are, in fact, very valuable, right? I mean, these aren't private lands. They're public lands and they're being retained in public ownership because there are a lot of benefits. One is the on-site use value... hiking,

archaeological exploration, learning about archaeological sites, hunting, fishing, wildlife viewing, mountain biking. These happen on site. And there's a lot of benefits that flow off site as well. So people back East that want to know that these resources exist. So in many cases articles that show up in the "New Yorker" and the "Atlantic" and "Parade Magazine" on the east and west coast is a recognition that people are interested in knowing about these resources, and they get utility. They get enjoyment and satisfaction from knowing about and reading about and watching television programs about wildlife or unique natural resources, you know, Grand Gulch and so forth.

In many cases these passive use values, these existence values that occur off

site, we sometimes refer to them as passive use values, and in studies we've done on wilderness, for example, and a lot of wildlife species, over half the value of these species is received off site by the general public. Kind of think of the nongame wildlife check-off. A lot of people that donate money to that never go out and step foot on

these land, but they receive benefits from knowing these resources exist. And BLM has many unique resources out there that provide these existence values and provide these bequest values and so forth.

So when we're looking at an RMP, we need to think about this. We need to recognize that first of all it is federal land. It's owned by everyone. And one of the things that -- this National Landscape Conservation System, what is it about the word "national" that some county commissioners fail to understand? It's national. It's not -- we have county parks. We have state parks. We also have national federal lands, and we need to recognize the broad benefits of those.

Andrew?

CLASS PARTICIPANT: [inaudible] That has a lot of scientific value has that ever been quantified? [inaudible] where does that fall -- you can probably quantify that, the Discoveries, the Discovery Channel shows that come out. I don't know.

PRESENTER: Right. So that's -- that's an interesting area. I have actually done a little bit of work in that for someone else. So there is research in economics on the value of patents and innovation and basic science, if you will, and what are the returns to basic science, and so there is that in the literature. People have tried to put a lot of effort into valuing biodiversity, for example. Some of the techniques I'll talk about, contingent valuation, for example, you know, would be great for things like archaeological sites. You know, what is the value of historic and archaeological sites? So in principle a lot of this stuff can be valued and it's just a question of -- many in cases going out and doing it. But I would be happy to provide of you that want, if you want to give me your card, we did a little study on what is -- you know, to the best that we could -- sort of the value of scientific information, a little bit of literature review, anyway.

Now, one of the things, too, that when I worked for BLM and BLM and Forest Service tends to do is focus on the local area. That's one of the things that IMPLAN does.

You're focusing down on this local area. And while the impacts per person may be higher on the local area, there aren't many of these people I mean, when I lived in Moab, let's be generous, there's 10,000 people. Even if the impacts are a thousand dollars a person, how does that compare to the hundred million people, 300 million people, right -- they may have very small impacts per person, but there's 300 million of them. In the aggregate, the impacts, even if they're

smaller per person, the aggregate impacts are much larger, and so we need to think about public, right? I mean, one of the things you got drilled in your head, it all to be plural, publics, and there's lots of publics, and one of the publics are the taxpayers who pay the bills. These people in Moab don't pay the costs of running that public land. Monticello, Utah, two, 3,000 people, they don't pay the tax dollars it takes to manage that land. Who pays that? The people that live on the east and west coasts where you've got 30, 40 million -- what, 30 million people in California? Almost 40 million on the west coast. You know, 100 million in the east coast. They're paying the taxes to manage the public lands and the techniques we'll talk about are a

way to give them a voice in public land management.

Now, the other aspect is that there are these nonmarket values to people, and spending is not a complete measure of, well, what's the contribution of this recreation activity to the local economy? It's not that, well, we're going to grab this tourist by the ankles and shake them, right, see how much money falls out, and that's somehow a measure of, well, that's their economic contribution. Well, they get a benefit, right? Part of what BLM is managing for under FLPMA is the relative values of the resource and the benefits that the users get, and, you know, these techniques are a way in which to measure that.

So this gives us a listing of these on-site use values and the techniques that we

can use to measure these, and we're going to look at how to use the existing literature, and one of the things about using the existing literature is, and I'll even pass out some new, improved tables of value, the values that I'm going to show you on a lot of these slides that we've done for BLM lands, we've done on Forest Service lands,

all come down to these techniques. There is no, you know, magic to doing this. It's basically you collect data. In many cases it may be data BLM already has such as with the travel cost model. In many cases this data is around. Other cases we're going to do contingent valuation method survey to collect this data. But these methods and the question that Elvin had asked is, you know, the answer to which was Marion Klassen, was in fact, yeah, the first Director of Bureau of Land Management is the gentleman that developed the travel cost method, and that was done when he was at Resources for the Future. The contingent valuation method was developed by Robert Davis in his dissertation at Harvard and Robert Davis spent about 20 years in the Office of Policy Analysis in the Department of Interior.

So these nonmarket valuation things may be new to BLM, but it's been more than 20 years that other federal agencies have used these techniques. This isn't something I imagined on the flight out here from Phoenix and said, you know, gee, here's some brand-new techniques I can spring on you folks. I mean, these

techniques have been used by -- and these aren't environmental organizations, right? The Corps of Engineers an the Bureau of Reclamation -- I mean, these are engineering organizations, right? I mean, these meet the standards that they set, public in the Water Resource Council Principles and Guidelines.

Contingent valuation with the Exxon Valdez oil spill became fairly controversial. They had new Nobel Laureates and several survey specialists reviewed contingent valuation and they said, Look, if it's done properly, if it's done carefully, it will produce reliable and valid economic values that are suitable for judicial and administrative decision making. Well, if you do this stuff carefully, you know, it gives you a reasonable estimate of value, and I'm not -- it's not perfect. Neither is IMPLAN. Chances are neither are the physical science models that you use.

Weather forecasting isn't perfect. They have 100 years worth of data. They have satellites. You ask them for a weather forecast in a week. How accurate are they? Not very. Do we not allow weather forecasting and

say -- meteorology isn't a science because it's not 100% accurate. One of the responses, Roy's point about the oil and gas industry, was giving me a little grief over using CVM. Well, it's not exactly accurate all the time. Well, if we apply the same standard to oil and gas, they would never drill a dry hole. If their models were perfect, the standard that they're setting for economic models like

contingent valuation, if they truly had science as good as the science they want us to have, they would never drill a dry hole. The fact that they drill a dry hole means their model was wrong. It was in error. Any model is an abstract or simplification of reality. It's not going to be 100 percent accurate all the time, but it provides information. And so these techniques, much like habitat modeling, in-stream flow techniques, meteorology, seismology, right, are models and techniques that provide decision makers with information, and the techniques that have been used -- I mean, the bureau of reclamation and Park Service, we did a contingent valuation on dam removal at Olympic National Park. It was published in the Environmental Impact Statement to quantify these nonuse values. Fish & Wildlife Service did a contingent valuation survey on wolf reintroduction. Roy and I did this in Jackson for those scattered parcels of land.

So I want to spend a few minutes on each technique, and when I get done with the travel cost, if you have questions, ask me, and then when we get to the contingent valuation you can ask me.

So the travel cost model is one I learned to when I worked at the Bureau of Land Management in Moab, Utah. It basically is a very simple technique, and in many cases you have the information to do this. If you have campground fee receipts. If you have trail registers that have zip codes. If you have voting permits that have zip codes. If you have backcountry permits that have zip codes. Those zip codes tell you where the visitor lives. And the travel cost model uses variations

in travel costs to trace out a demand curve.

So what we get is we have visits down on this axis and we have dollars of travel cost that we can calculate, and we just observe -- in some sense we have different represent supply curves for different zip codes, and we observe how many people come. Well, at very high travel costs we get very few visitors, maybe only people taking two trips. Lower travel costs, more. At lower travel cost even more. And, you know, statistically multiple regression is not much more than playing connect the dots, something we all learned to in elementary school.

Once I have that demand curve, I can calculate that consumer surplus from each of these sites, and with my management action I can see how that demand curve shifts across alternatives. If you do something that enhances the resource, you improve -- do a stream restoration, you build a campground, you put in new trails that separate incompatible uses, hiker and mountain bikers and OHV users that's going to shift that demand curve out and increase that consumer surplus. We're going to get a change in consumer surplus. We're going to get more visits. Visits is going to increase. And we're going to get more consumer surplus.

As I say, this technique, one, it relies on actual behavior, and we can look at how that value per trip changes with changes in many of the things that you do, whether it's improving the quality of fishing and hunting, water quality, providing

facilities. And as I say, I learned to this -- you know, I discovered the file drawers at the BLM in Moab were full of permits for hiking Grand Gulch, rafting West Water Canyon. You know, the fish and game agencies collected data that had hunter zip code, angler zip codes. In many cases your trail registers have -- you know, you ask them for a zip code. So, some cases, even getting license plates. You got zip codes. With that zip code data, you know what county and what location people are from. You can calculate the travel costs to the site.

The other way we've done if is oftentimes if you're getting ready to do an RMP, talk with your fish and game agency. They often do surveys. They do CREOL (phonetic) surveys, they do post-harvest surveys every year. Well, in some cases they'll let you have the data. Other cases they have an interest in getting better information in your hands. Gee, could you add some questions to your existing CREOL (phonetic) Survey. You know, I found -- we've worked with Idaho Fish and Game, Montana Fish, Wildlife and Parks, that was a study Stuart and I worked on, you know, Montana Fish, Wildlife and Parks was very delighted to develop surveys and -- if the Forest Service asked for this information, they're like, sure, we'll provide you that information. And so those studies got used by multiple federal land management agencies.

BLM has started to this under Ashley Willcox Goldbar initiated some surveys, and I guess Vicki is continuing to look at some of these surveys of BLM areas. They gave me this survey data that BLM had collected, and here's just an

example of some of the sites in Colorado, Alaska, Idaho, Oregon, Wyoming. I took that data, ran some travel cost models with it, and this is the consumer surplus, which came out in black in white -- or black rather than white.

If you look in your notebook you can see what these values are. Let's spend a moment interpreting what these are. So at the Anasazi Visitor Center Canyons of the Ancients, the consumer surplus is $19. That means on average each person would spend $19 more than their current cost. So they may have expenditures of $20 to get there, and they would be willing to spend another $19 to go to that site rather than the next best substitute. Now, you can't charge them all $19 as an entrance fee. This is an average willingness to pay per day. Half will pay more. Half will pay less. But this is the average consumer surplus.

And so when we -- I show you some of the values from the literature, this is how we develop them, and they vary across sites. So some of the sites in Oregon that are water-based sites have a fairly high willingness to pay, and again this is the consumer surplus. We estimate based on the fact that some people pay a great deal, right? They're paying $150 to go to that site. Well, that means these people down here that only pay $50 are receiving a consumer surplus on those first couple trips of $100. How do we know these people living close by the site will, in fact, pay more? Well, we observed these other people who actually had to travel further and actually did pay more. Sense, on those first few trips, there's quite a consumer surplus. And you can see this almost turns the expenditure

and input-output thing on its head, right? Because, in fact, the less you spend, the more benefit you have. And if BLM's looking at, well, can we afford to invest in a new boat ramp, new rangers, whatever, right, if you want to tap as an entrance fee, you have to tap the consumer surplus.

Looking at expenditures to decide, well, gee, you know, is the benefits of building a new boat ramp -- could the users pay the cost of that boat ramp? Well, gee, how much do they spend already? Well, in some sense that's irrelevant. They already gave -- that money went into the gas pump. That money is not available. It went to Exxon Mobil or it went to Total Petroleum. what's available to pay an entrance fee or to cover the costs of the investment? It's the consumer surplus, because that's the money they haven't shelled out. That's the money they retained.

So we look at how far differing groups of people travel and we know that the people close by, then, realize, right, in some sense they buy it on sale, because they live close by the resource. They realize the consumer surplus. That's a benefit to them, and in a benefit-cost analysis, that's the benefit to the nation, because the idea is if you close that site, what am I going to lose? Am I going to lose the $50 I would have spent? So you close this site. Oh, well, I can't go there anymore so I'm just going to flush this down the toilet. What do I lose? I'm going to take that money, right, I'm going to spend it somewhere else. What I lose is the consumer surplus. This was my first best choice. I wanted to go to

this particular recreation site that had a high consumer surplus because of its location, because of its quality. So this is what I'm saying, the expenditures, right, if you close a BLM recreation site, those people go somewhere else. That money will get spent somewhere else. What will be lost is the consumer surplus and that's what these numbers represent.

So before we go to contingent valuation, are there questions sort of on the travel cost method and estimating use values?

PRESENTER: [inaudible] I would like to make point and that is that if you think you need to do one of these kinds of analyses, you have to figure this out as early as possible because to gather some of that data may take you a little bit of time and line up somebody that can do that, and you can't wait until the last minute.

PRESENTER: Questions on the travel cost method?

CLASS PARTICIPANT: [inaudible] information, is that a passive survey where you just leave the forms and it doesn't count in the OMB requirement?

PRESENTER: What we've done in the past is -- I mean, you can use visitor registers, right, that are at the trail register. Most of the permits stuff that BLM does, right, for Grand Gulch or for West Water Canyon, a lot of these are

self-registration or they have to get a permit through the mail. So none of that is actually surveying visitors. So that is why I was able to do this. I mean, the drawers were literally full, at least -- not for every place but for a lot of these recreation sites that BLM actually manages. They do collect. And remember, we only need a sample. The fact that everybody doesn't register isn't a problem. Right? I mean, statistics is based on sampling. So we don't need to have 100% compliance on registration. Long as there's not a systematic bias, and that we could maybe do some follow-up to see, okay who registers/who doesn't register to use that data. But in many cases the license plates, Forest Service has done analysis just writing down license plate numbers and going to the DMV as a government agency and saying I would like the zip code associated with these license plates.

Josh?

CLASS PARTICIPANT: [inaudible] those registers, they don't give you their full trip cost.

PRESENTER: No, they. So, you know, you use AAA or U.S. Department of Transportation cost of owning and operating a vehicle and you just use the variable costs. So, I mean, these things, you know, you can look up, right, on the web. AAA will have what's the variable cost of driving per mile, things like that. So fairly straightforward to do, but it does -- John Thompson is correct, it doesn't

happen overnight. But, I mean, it's not that difficult or that time consuming, particularly if you're already routinely collecting the data.

CLASS PARTICIPANT: [inaudible] available to us, I mean, if we wanted to use something like this, how would we go about trying -- and we had the data, we had the zip codes and all that --

PRESENTER: As long as you've got somewhere in your agency someone who can run a regression and knows a little bit about that. So you could go like Roy has been doing, go to the University of Wyoming -- you know, there's grad students that can do that, at your land grant university, or you can, as I say, in many cases, you know, people -- there are agency economists or there are people with statistics. All you need -- you can almost do this in Excel. I mean, that's not ideal, but there is a regression package in Excel. And so -- and there's references in the manual and stuff. So, you know, we all had to learn -- if you had to take a statistics and multiple regression class, you have to dust off the book or find someone willing to do that.

Well, let me talk about contingent valuation. You know, the acronym for it is CVM, and this is a nice supplement to a lot of your public involvement. As was mentioned earlier by Stuart, you know, you go out and randomly sample the public and ask the majority of people who own these resources and say, what's your value of this resource trade-off? So it's not a public opinion poll. It's not,

well, everybody in favor of saving the Arctic National Wildlife Refuge raise your hand. All right? I mean, this is -- look, there's a sacrifice. If we don't drill in some of these areas, you know, there is a sacrifice. Now, in most cases there will not be a reduction in the price of gasoline if we drilled every square inch of public lands, nor will the price go up if we don't, if we do drill, right. The big players in this are OPEC and, you know, those countries. I mean, the same way with a lot of these resources. But what we want to do in some sense is create a simulated market and ask people, what would you sacrifice? That's the idea behind contingent valuation. It is a simulated market or a simulated referenda. In California and Colorado we vote on open space taxes all the time. Do you want to pay an increase in your sales tax to purchase more open space? And people vote "yes" or "no" at that price. They do that in Oregon. What we're doing is kind of taking a survey and making a simulated market out of it to see if people will trade it off, and some people will say, yes, I would be willing to pay. Some people won't. We're actually happy when people say, no, I won't pay, or zero, because that means they're taking it very seriously. So this technique has been tremendous amount of testing over the years and so forth, and basically it's a reliable method. If you give the same survey eight months later you will not get a statistically different answer. But it measures that sacrifice in dollar terms. And so this is how we convert all those nice things like scenic vistas, amenities, endangered species, water quality. People have a value for that. We're giving them an opportunity to express that value through a constructed market, and we get that value in monetary terms, and that allows us to change the debate from wildlife versus people, right? That's what we heard with the spotted owl... owls

versus people. Fish versus people. Right? We've heard this with -- what was it a clam or a mussel here recently down in Atlanta. Water for people or water for this endangered species? Well, that's a false dichotomy and it's polarizing the debate. People care about these wildlife species and they care about people, and the question is, well, how much of a trade-off, how much would they pay in higher taxes, utility bills or whatever to maintain these endangered species, to maintain archaeological sites, wilderness, water quality, air quality. I mean there literally have been thousands of applications of contingent valuation to valuing air quality ovary moat national parks for endangered species and for a variety of wilderness areas, recreation and so forth.

Now, you're not often going to be able to have the time to do a CVM study, but that's where when you go to the literature, the literature values that are on that back table in our report that Randy Rosenberger and I did for the Forest Service, and that I'll hand out some updates to, these things come from travel cost an CVM studies. So that's why it's important to understand where the values come from.

Now, in many cases basically you could take values from the literature. That's what benefit transfer is. It's an application of these estimate travel costs and CVM willingness to pay values from where they were done to your resource area. You know, basically, we've got lists like I just showed you of recreation sites, you know, the BLM, the Forest Service, Fish & Wildlife Service, every national survey

of fishing, hunting and wildlife associated recreation, while they report expenditures, they also do a contingent valuation or willingness to pay study that goes along with it. You just have to look a little more to find that.

So your Field Office can basically look and say, gee, can I find in the literature a similar study that's been done elsewhere using travel costs or CVM and apply to that my study area? If not, we've got average values. EPA has done this, and I'm in the process of developing some CD's, and I'll hand out some examples here where we've got tables of values from the literature.

So here is another hard-to-read slide. So that top consumer surplus per day that is the GTR72, that one is what's on the back table there that Randy Rosenberger and I did. There's a newer one that we just recently finished that's available on the Pacific Northwest Research Station. And what I'd like to do at this point is hand out -- and I'm not sure if I have quite enough here, but -- so if there's more of you at some offices than others, or if you know where I live -- if you could even just share. I'm not sure -- every other person or something.

So these are new tables of value -- oh, is that my original? Thanks. Actually -- who needs -- did you guys get any over there? If there's extras -- is there a couple extra there? Why don't you hand them over there.

So these are tables of -- pardon? I might use one to refer to it.

So this is a spreadsheet that we developed, and this has both values per fishing day, hunting, wildlife viewing. Has value per wetland. Has economic values per salmon. And then on the very back, economic values of endangered species. Behind each one of these tables is a spreadsheet that has the original studies in them coded by the author, the title of the study, the journal it came out of, the method that they used and so forth, and so what we're hoping down the road, and scrambling along here, we have a version 1.0 at this point, is basically through Defenders of Wildlife and working with Lynn Kuntz and others we're going to try to distribute these and eventually incorporate them into this course. But the idea is from a benefit transfer standpoint we've finally gotten to the point where we can do not only benefit transfer for recreation use values; we've now got enough studies in many case to do benefit transfer for passive use values for things like endangered species, for wetlands. To get at that total economic value we finally started to assemble, at least for endangered species, wetlands, wildlife habitat, salmon, you know, those resources estimates from the literature on total economic value. And as I say you can go -- the layer that's underneath these tables, then, provides that.

Maggie, did you have a --

CLASS PARTICIPANT: [inaudible] I'm thinking in terms of cumulative effects analysis. So if I hear you correctly, the relevant scale or scope analysis is to have the national when you do your cumulative effects analysis for something

like this?

PRESENTER: Let's see if I understand the question. I mean, these -- these are the values that the users receive. Now, if we're looking at recreation, they occur on site. Now, if you're looking at -- let's say you're providing endangered species habitat. The locals maybe care less or even be hostile toward it, but we know that there is a value to the public out there. So you would multiply -- that brings up a good point that I had mentioned earlier. These values, this total economic value is per household, and you'd multiply by the number of households. Now, that depends, right. If this is a federally listed species, it may be appropriate to multiply by the number of household in the United States. It's a species of local concern that's a state-listed species or something, you might just multiply by the number of households. So I'm not sure if it quite gets cumulative impacts looking at a series of projects, at least the way I think of cumulative impacts. I think of that as avoiding a piecemeal analysis, right? So that's what the Forest Service RPA does nicely, right? They kind of pull all this stuff together at the regional level. I mean, BLM doesn't have a mechanism yet. We go RMP by RMP by RMP and never kind of pull together the -- what I would consider to be a cumulative impact. All the RMPs in the states and the adjoining states get added up and go, whoa, you know, everybody kind of assumes the other state, right, is -- we can have sage grouse over here, and, of course, they're assuming, well, you can have sage grouse over there, and nobody is providing it. So that's a bigger kind of planning issue, and as I say, up to a point I'm not sure the RMP

process is too fine a scale to deal with that.

But in terms of looking at national values, yeah, these total economic values are per household. So for salmon, endangered species, wetlands in some cases, and then you would multiply by the relevant number of households. So that's where you would bring that national perspective into play and say, well, look, there are people, we know, from articles and magazines and TV shows, National Geographic, we know this is a national resource. It has national exposure. And these averages reflect an average over the population. There's some people that say, Look, I really value this. There's other people that say, Ehh, I really don't care, it's not in my backyard, it's not valuable to me. So we do get zero value, so that average reflects the full distribution.

Questions, then, on this before we kind of move to a real short sort of exercise? Not the usual painful exercises.

CLASS PARTICIPANT: Getting back to the Snake River study, did you use these values somehow to identify how valuable those pieces of property were that were up for the land exchange?

PRESENTER: Right. Well, one of the ways, and Kelly might help us out here, tying back to what Roy said in a ranking, one of the nice things that we did with that survey that allowed us on the Snake River is we had Teton County, we had

Wyoming and we had the U.S., and we had several alternatives, and while we got contingent valuation, willingness to pay in dollars, so we asked households in each one of these how much you'd pay. The no action is we're going to sell them. If you want BLM to keep them, it costs a lot to manage it. Kelly has a long ways to drive here and gas is expensive. So would you pay that amount, "yes" or "no," and we varied the dollar amount. We use a dichotomous choice approach where this table would be asked would you pay $5, $20, $50, $100, $150, and we would look at that percentage of yes/no.

We then got the dollar values, and in this case, one of the things we found was that there wasn't this local-national trade-off. The ranking of alternatives by willingness to pay, disposal was the lowest rank. Manage it for livestock grazing and sand and gravel was the next lowest. Wildlife was the highest. And recreation was the second highest. And so using willingness to pay in this case just as a metric, right, a measure of intensity, we were able to say, well, look, everybody thinks it ought to be managed for wildlife even if we have to cut recreation back. Very few people want to see it managed for livestock grazing and sand and gravel. And very few people wanted to sell it. So that's how, at least, I see as an economist. Kelly, you might --

CLASS PARTICIPANT: I don't think I have anything to add to that. We did find it surprising that all three groups the ranking came out the same in the priorities, but --

PRESENTER: So that's the nice thing about this, because, again, what I think Stuart mentioned is, what do you get at public meetings? It's too polite or scientific to call it self-selection. I mean, that's true, that's what it is, but what you get is each person that comes there goes, I represent the public interest. The public wants X. And, of course, you get somebody else from a different economic perspective. I represent the public interest. The public wants Y. Well, neither one of them -- they're at that public meeting because they have a vested interest. They're not a random sample of the public. As part of your public involvement process, part of the deal is why don't we go out to the public? Why do we require the public come to us? If we, the agency, require the public to come to us, of course we're only going to get people that have vested economic or vested interests. If we want to know what the public -- we manage public lands -- that we wish to know what the public who pays the taxes thinks, we should go to them, and we got -- I think it was like about a 65% response rate after two mailings on the Teton County, 55% response rate on the Wyoming, and a 35% response rate on the rest of the U.S. So we selected them at random, and we hounded them with repeat mailings, postage paid return envelope, and we got a pretty good response rate. So we felt -- we got a representative sample. This is what the public thinks. Now, it's important for NEPA to know what those people that have an ax to grind and have an economic vested interest think, but the point is that each one of them often says they represent the public interest, and it's, of course, impossible to have diametrically -- people walking in and one saying X and one saying Y, you know, that's 180 degrees. The public

wants more motorized recreation. No, the public wants less motorized recreation. Let's ask the public and see what they want. And as I say, in evaluation sense, we ask them, look, this isn't a public opinion poll. It costs money for BLM to manage these resources. With a would you pay? And so that takes it out of -- you know, it really makes it to me an economic question. Look, what -- how valuable is it to you? And so, you know, it's not free. It's going to cost you. And, you know, this is where the contingent valuation is kind of helpful.

Other questions on that before we do -- and I'll be around the next day or two so you can pick what's left of my brain if you'd like at that point. I know it's rather late here.

Well, let's talk about these three, and if I could have your attention up here on the flip chart for a moment, then. What we want to say is I've got three different -- I'm sorry, four different resources there. So I've got upland game, bird hunting, and I've got kind of local river rafting, you know, kind of tubing with your keg of beer behind you, you know, sort of whitewater rafting, like West Water Canyon or the Green River, and then you've got this desert elk herd. Would I measure use values or nonuse values or both? And the tool that I would use. Would I use travel costs, contingent valuation, benefit transfer? So what do you think? If, in fact, BLM, you know, if there was going to be some surface disturbance would that adversely affect, you know, upland game bird hunting, would it be recreation use values? Would it be an existence value? Would it -- would woo I use travel costs? Would I use contingent valuation? So we think about the value to be

measured. Is it use value, is it nonuse value? If it's use value, I can use travel cost or CVM. If it's nonuse value, I can only use contingent valuation.

I have no prizes to give away other than to let you out of here, which at that point is probably a pretty big prize. As they say, I'm sure you will not walk out of here; you will run out of here.

So for upland game bird hunting -- pardon? I can't hear you.

CLASS PARTICIPANT: Use.

CLASS PARTICIPANT: Use value.

PRESENTER: It's definitely a use value, right? I mean, if we're hunting this species, we got enough of them, right? They're not threatened or endangered. They're viable population, right? So it's a use value. And so what techniques could I use?

CLASS PARTICIPANT: Travel costs --

PRESENTER: I could use travel cost model if the data that -- I've gone to the warehouse at Cal Fish & Game. I mean, oftentimes they got the stuff in literally boxes out in the warehouse. So we could do travel cost. We could do CVM. Or

we could even do benefit transfer, right? I mean, upland game bird hunting has been studied. There's several upland game bird studies, on hunting upland game birds in lots of states. You could go into the database and look and see if you could find a study for your state or an adjacent state that you think is similar.

How about local rafting or tubing, you know, down a river that goes through town. Is that a use value or a nonuse?

CLASS PARTICIPANT: Use.

CLASS PARTICIPANT: Use.

PRESENTER: Okay. That's a use value. So once again, I can apply any of those techniques, either the travel cost method, CVM or benefit transfer. Now, I'd want to look in that data, right? I might not want to take an average value for rafting without looking to make sure because the literature also has values for whitewater rafting in the Grand Canyon. Those values are likely to be quite different, right, than local rafting. So I might want to -- you know, if I can do -- if there's permits or I can get data, I'll do a travel cost. I might do a benefit transfer. But I'd have to look in the literature to make sure I found similar rivers. I wouldn't want the Rogue or the Grand Canyon or Hell's Canyon, right, for this one. But what about for whitewater rafting? If I have West Water Canyon or if I have Green River, right, Labyrinth Canyon, Desolation Gray. Right? I mean, those

are some of the BLM's premier rafting. I mean -- that's a use value.

CLASS PARTICIPANT: Also cab nonuse, that free flowing river that's rare --

PRESENTER: Right. So now it depends on what the management action is, right? So if the management action is something to do with, maybe, grazing along it or whether to allow off-highway vehicles or something that may not be too irreversible, it might be predominantly use values. But you're absolutely correct, right, if BLM's looking at permitting somebody to build a dam or, right, there were leases offered -- as I recall there were oil and gas leases offered along the rim of Desolation Gray. That's going to be there a long time, right? So there may be some nonuse values as well, right, and option value. I might be willing to pay something today to know that when I want to go three or four years from now it doesn't have drill rigs all along the side. Or it doesn't have a dam. I might have an existence value, right? I've done that -- I've done Desolation Gray. I'll probably not do it ever again or get opportunity, not that I didn't enjoy, but I kind of want to know that it exists as it existed when I went down that river and that it is a pristine canyon, and I might want my children or grandchildren, you know, to have the opportunity, you know, to go down that. So depending on what's the management action, if the management action involves something that was irreversible, yeah, there may be among nonusers, right, for something like the Grand Canyon and something like Desolation Gray or West Water -- and in fact, that's actually the case. People have measured the use value for

whitewater rafting in Grand Canyon and it turns out to maintain adequate flows out of Glen Canyon Dam there was quite a significant nonuse value.

Well, what about this sort of desert elk herd? This is sort of their winter range. There's no -- for the purposes of this illustration, there's no hunting there, right? They're out there in the winter, they're just hanging out. Might be actually almost impassable to get out there to see them a lot of times in the winter.

CLASS PARTICIPANT: Nonuse.

PRESENTER: So, yeah, there would be a nonuse value, an existence value, and how would we have to measure that, then? What's the technique? If there's any little blood flow bubbling up there. Blood sugar levels going down, I know. Would we use a travel cost model? No, nobody's traveling out there, right? So we would use contingent valuation, right? We would create a simulated market and say, Gee, you know, how much more would you pay, and then we'd have to find a way that made sense and focus groups to pay. Would you pay through higher gasoline? Would you pay through a license fee of some sort? Would you pay through your income taxes?

When we did hydropower in the Grand Canyon, a utility bill made sense. When we did the Elway Dam removal, we used federal taxes. So it kind of depends on the setting. What's a natural way that people would pay for this public program? And so, you know, that's how you would have to set this up. Now, in some

cases, right, I mean if this elk herd may -- if it was an endangered elk herd we might have some studies in the literature, we might be able to do a benefit transfer. So something like this we could do CVM or benefit transfer on whitewater rafting. Here, you know, there may not be a similar study and so you'd have to plan to do something like contingent valuation if you thought it was important enough and if you had the time. If you don't, you know, you might even just have a range of values from benefit transfer, because one of the important things about nonuse values, they may be small per person, but in the aggregate they're very large. If you ignore them, the implicit value is zero. Now, contingent valuation may not be exactly precise and exactly reliable. You know, look, on nonuse values, you know, it might be biased by a factor of two or three. We get a willingness to pay, people tell us they'd pay $30, and the actual cash validity study suggests they might only actually really fork over 10 or $15. That's still greater than zero. Ignoring these things implicitly has a zero value to them. We disenfranchise all of the nonusers. All of the public that doesn't visit, that doesn't live in our study area are not really given much of a weight. And if we leave these things out, we then paint a picture, and this is sort of the -- you know, one aspect of the bottom line of your RMP. Most of the RMP's I've reviewed make it look like it's the economy versus the environment, because, boy, we've got oil and gas, boy, we've got livestock grazing, boy, we've got timber harvesting. And then we describe, well, there's some recreation out there, but we don't have any idea how many and what they spend. There's probably some wildlife viewing out there, but, you know, we're not sure how many and what they spend. So when

you run the IMPLAN, what do you get? All the income and employment being generated by livestock grazing and oil and gas and timber harvesting versus all these other things. Well, if you have an alternative that emphasizes environmental protection and wildlife habitat, what does it show? Whoom! Big hit on oil and gas and livestock grazing and timber harvesting. Is there any offset in gain in tourism and income employment? No. Is there any offsetting gain in nonmarket valuation? No. Well, what's a poor manager to do in this case? You've painted him or her into a corner. You've quantified the market stuff. You've used IMPLAN to do that, and it pretty much paints him or her into a corner, right? They'd have to take an awful lot of heat to go, yeah, we should give up all this income and employment associated with logging, grazing and mining to gain all these environmental amenities for which we have no economic values in the report. There are economic values, but we haven't taken the time or effort to quantify these things. So it paints a false picture. It makes it look like there's a trade-off between preserving the local economy and the environment. When in fact there probably isn't. It's just we haven't gone sort of the extra yards on the data. So...